

Listing of Claims:

- 1 1. (currently amended) A filter element, comprising:
2 a ring of filtration media circumscribing a central axis and defining a central
3 cavity, the filtration media ring having a first end and a second end;
4 a first, circular end cap having an inner surface sealingly bonded to the
5 first end of the media ring, the first end cap including an annular body portion
6 defining a central opening into the central cavity of the media, a sealing device
7 bounding the central opening, a vent orifice in the annular body into the central
8 cavity at a predetermined location, radially outward from the sealing device, and
9 an orientation device permanently fixed to and integral with the first end cap and
10 projecting radially outward therefrom; and
11 a second, circular end cap sealingly bonded to the second end of the media
12 ring, a retaining device fixed to and integral with the second end cap and
13 projecting outwardly therefrom.
- 1 2. (previously presented) The filter element as in claim 1, wherein the sealing
2 device comprises a flexible lip seal bounding the central opening of the first end cap.
- 1 3. (previously presented) The filter element as in claim 2, wherein the flexible lip
2 seal is unitary with the first end cap.
- 1 4. (original) The filter element as in claim 1, wherein the retaining device is unitary
2 with the second end cap.

1 5. (original) The filter element as in claim 1, wherein the first end cap includes a
2 sleeve outwardly bounding the peripheral edge of the first end cap, and extending a short
3 distance from the first end cap toward the second end cap, the orientation device being
4 unitary with the sleeve of the first end cap and projecting radially outward therefrom.

1 6. (previously presented) The filter element as in claim 1, wherein the orientation
2 device is unitary with the first end cap.

1 7. (original) The filter element as in claim 1, wherein the retaining devices comprise
2 a plurality of individual elements, fixed to and integral with the second end cap and
3 projecting radially outward therefrom.

1 8. (original) The filter element as in claim 1, wherein the retaining device projects
2 axially outward from the second end cap.

1 9. (original) The filter element as in claim 1, wherein the retaining device projects
2 radially outward from the second end cap.

1 10. (original) The filter element as in claim 1, wherein the second end cap includes a
2 sleeve outwardly bounding the peripheral edge of the second end cap, and extending a
3 short distance from the second end cap toward the first end cap, the retaining device
4 being unitary with the sleeve of the second end cap and projecting radially outward
5 therefrom.

1 11. (currently amended) A filter assembly comprising a housing having a threaded
2 open end, a closed end, and a central axis, a first port to direct fluid into the housing and a
3 second port to direct fluid from the housing, the housing including orientation means
4 integral with an internal surface of the housing and projecting outwardly therefrom; a
5 cup-shaped cover with threads adapted to be screwed down onto the threaded open end of
6 the housing, the cover including retaining means internally of the cover; and a filter
7 element removably disposed within the housing, the filter element including a ring of
8 filtration media circumscribing a central axis and defining a central cavity, the filtration
9 media ring having a first end and a second end; a first, circular end cap at the first end of
10 the media ring, and an annular body portion defining a central opening for receiving a
11 cylindrical component, and an annular seal bounding the central opening of the first end
12 cap for providing a fluid seal with the cylindrical component, a vent orifice in the first
13 end cap into the central cavity of the filter element, disposed radially outward from the
14 seal, and a cooperating orientation means permanently fixed to and integral with the first
15 end cap and projecting outwardly therefrom, the orientation means of the first end cap
16 having a configuration such that the orientation means on the first end cap cooperates
17 with the orientation means in the housing when the element is fully received therein to
18 rotationally orient the filter element with respect to the housing such that the orifice in the
19 first end cap is in a predetermined rotational position relative to the housing; and

20 a second, circular end cap at the second end of the media ring, the second end cap
21 including retaining means, the retaining means of the second end cap interengaging with
22 the retaining means of the cover to temporarily couple the end cap to the cover when the
23 cover is initially screwed down onto the housing, wherein when the cover is initially
24 screwed down onto the housing, the filter element rotates in conjunction with the cover
25 until the cover is screwed down a predetermined amount, after which the orientation
26 means of the first end cap engages the orientation means of the housing, to rotationally
27 lock the filter element with respect to the housing, the interengagement between the cover

28 and element being such that when the orientation means of the housing and first end cap
29 engage, the cover can thereafter rotate with respect to the filter element as the cover is
30 fully screwed down onto the housing.

1 12. (currently amended) A filter assembly comprising a housing having a threaded
2 open end, a closed end, and a central axis, a first port to direct fluid into the housing and a
3 second port to direct fluid from the housing, the housing including an orientation device
4 integral with an internal surface of the housing and projecting radially inward therefrom;
5 a cup-shaped cover with threads adapted to be screwed down onto the threaded open end
6 of the housing, the cover including a retaining device internally of the cover and
7 projecting radially outwardly therefrom; and a filter element removably disposed within
8 the housing, the filter element including a ring of filtration media circumscribing a central
9 axis and defining a central cavity, the filtration media ring having a first end and a second
10 end; a first, circular end cap at the first end of the media ring, having an annular body
11 portion defining a central opening for receiving a cylindrical component, and an annular
12 seal bounding the central opening of the first end cap for providing a fluid seal with the
13 cylindrical component, a vent orifice in the first end cap into the central cavity of the
14 filter element, disposed radially outward from the seal, and a cooperating orientation
15 device permanently fixed to and integral with the first end cap and projecting radially
16 outwardly therefrom, the orientation device of the first end cap having a configuration
17 such that the orientation device on the first end cap cooperates with the orientation
18 device in the housing when the element is fully received therein to rotationally orient the
19 filter element with respect to the housing such that the orifice in the first end cap is in a
20 predetermined rotational position relative to the housing; and

21 a second, circular end cap at the second end of the media ring, a retaining device
22 integral with the second end cap and projecting outwardly therefrom, the retaining device
23 of the second end cap having a configuration such that the retaining device of the second
24 end cap interengages with the retaining device on the cover to temporarily couple the end

25 cap to the cover when the cover is initially screwed down onto the housing, wherein
26 when the cover is initially screwed down onto the housing, the filter element rotates in
27 conjunction with the cover until the cover is screwed down a predetermined amount, after
28 which the orientation device on the first end cap engages the orientation device on the
29 housing, to rotationally lock the filter element with respect to the housing, the
30 interengagement between the cover and element being such that when the orientation
31 device on the housing and first end cap engage, the cover can thereafter rotate with
32 respect to the filter element as the cover is fully screwed down onto the housing.

1 13. (original) The filter assembly as in claim 12, wherein the retaining device on the
2 cover comprises a rib, ridge or tab, and the retaining device on the second end cap
3 comprises a pair of closely-spaced ribs, ridges or tabs for each retaining device on the
4 cover.

1 14. (original) The filter assembly as in claim 12, wherein the orientation device on the
2 first end cap comprises a rib, ridge or tab and the orientation device on the housing
3 comprises a rib, ridge or tab.

1 15. (previously presented) The filter element as in claim 1, wherein the vent orifice is
2 disposed radially intermediate the sealing device and the media ring.

1 16. (previously presented) The filter element as in claim 1, further including an
2 annular locating sleeve projecting outwardly from the annular body portion, radially
3 outwardly spaced from the sealing device.

1 17. (previously presented) The filter element as in claim 16, wherein the locating
2 sleeve is radially outwardly disposed from the vent orifice, and includes a notch located
3 in radial alignment with the vent orifice.

1 18. (previously presented) The filter assembly as in claim 11, further including an
2 annular locating sleeve projecting outwardly from the annular body portion, disposed
3 radially outward from the central opening, and the vent orifice is disposed radially
4 between the seal and the locating sleeve, and the housing includes a corresponding
5 annular channel located so as to receive the locating sleeve when the filter element is
6 located in the housing, so as to locate and support the element in the housing..

1 19. (previously presented) The filter element as in claim 18, wherein the locating
2 sleeve includes a notch located in radial alignment with the vent orifice.

1 20. (previously presented) The filter assembly as in claim 12, further including an
2 annular locating sleeve projecting outwardly from the annular body portion, disposed
3 radially outward from the central opening, and the vent orifice is disposed radially
4 between the seal and the locating sleeve, and the housing includes a corresponding
5 annular channel located so as to receive the locating sleeve when the filter element is
6 located in the housing, so as to locate and support the element in the housing..

1 21. (previously presented) The filter element as in claim 20, wherein the locating
2 sleeve includes a notch located in radial alignment with the vent orifice.

1 22. (currently amended) A filter element, comprising:
2 a ring of filtration media circumscribing a central axis and defining a central
3 cavity, the filtration media ring having a first end and a second end;
4 a first, circular end cap having an inner surface sealingly bonded to the first end of the
5 media ring, the first end cap including an annular body portion defining a central opening
6 into the central cavity of the media, sealing means bounding the central opening for
7 sealing against a circular collar, an annular locating sleeve radially outwardly spaced

8 from the central opening and projecting outwardly from the annular body portion, a vent
9 orifice in the annular body into the central cavity at a predetermined circumferential
10 location, radially disposed between the sealing means and locating sleeve, and orientation
11 means permanently fixed to and integral with the first end cap and projecting radially
12 outward therefrom for rotationally orienting the filter element within a cylindrical
13 housing; and

14 a second, circular end cap sealingly bonded to the second end of the media ring,
15 retaining means fixed to and integral with the second end cap and projecting outwardly
16 therefrom for temporarily retaining the element within a cover.